

Air Transport FEEDBACK



Edition 134 - April 2020

Editorial

As I sit here composing this in my first week in the role, it's difficult to think beyond the parallel universe of coronavirus restrictions and all the attendant concerns and impact that that brings. Many in the aviation world will be facing huge uncertainty, job losses, furlough, lock down or potentially worse. All of this reflects the very human impacts and fragility that we are all experiencing as a result, and aviation is not immune. Considering the perhaps sometimes esoteric aspects of aviation might therefore seem something of a distraction but, without diminishing the really pressing and immediate day-to-day challenges that many face, we need to think beyond the present and to the eventual return to something like normality once we have come through the other end. Many will have fallen out of currency, systems and companies will have been strained to the limit, and the return to flying will be accompanied by the temptation to cut corners or press on when otherwise we would not. Aircraft will have been in storage and require extra maintenance to return them to full flying standards, people will be rusty in all areas,

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and some will be emotionally and physically drained from the extra care, financial and societal worries. The need to be honest with ourselves, look out for others, and anticipate the many hurdles and road blocks that will inevitably arise will be more important than ever. I have often applied what I call my '3C's to Human Factors (HF) issues during my aviation career: Caution, Consideration and Courtesy for others will be our watchwords as we return to full-scale aviation operations.

On a lighter note, it is of course a great privilege to take on this role, and I have big boots to fill as we say goodbye (again!) to Ian Dugmore who, having previously retired, returned last year to cover the Chief Executive gap that occurred at short notice. Ian has done a fantastic job over the years and I hope that I can continue his sterling work as I bring my own perspective to CHIRP. As for me, my background is as a military fast-jet pilot (mostly Harrier and Tornado, neither of which are now in service sadly, which perhaps gives a clue to my age!). I've done a bit of gliding in the past (and hope to return to this now that I may have a bit more time), and spent just over 6½ years as Director UK Airprox Board where I made many good friends and productive contacts in the UK aviation safety community, regulators and associated stakeholders. I look forward to continuing and building on these relationships as we try to make a difference to the many key issues that are raised on your behalf and reported in FEEDBACK for the education of all.

Which brings me to my last point. CHIRP's overall mission is to improve the safety of the travelling public and that of individuals employed within or associated with aviation and maritime operations. Within that broader remit, the aviation programme's purpose is to take your safety-related aviation reports and, where appropriate, raise awareness of and champion the resolution of issues that might not otherwise be submitted through the UK's Aircraft Accident Investigation Branch (AAIB), Civil Aviation Authority (CAA) Mandatory Occurrence Reporting (MOR) system, or Commercial/Club Safety Management Systems (SMS) and safety processes. So please do keep reporting! The Advisory Board members bring a wealth of experience and knowledge to the debate when discussing your reports but can only look at those issues that are brought to their attention by you, so please don't be shy about getting in contact if you can't make progress through the normal safety channels.

Stay safe! Steve Forward, Director Aviation

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Engineering Editorial

Firstly I would like to welcome Steve to the CHIRP team and I look forward to working with him in the future, I know he brings a great deal of experience and knowledge to the team at what will be a difficult period in aviation. I would also like to thank Ian for all the help he has given me over the last few years, and the great job he has done leading the team. Well done Ian, I wish you all the best for your retirement.

Picking up on Steve's first editorial and the COVID-19 issue which is obviously the number one issue in aviation currently. A couple of months ago, many engineers were trying to understand the issues of COVID-19 in relation to the work they were doing at that time. Managers were struggling to support them but often with no more information than the engineers themselves. We all looked to the World Health Organisation (WHO) for this information and guidance, like everyone else, and came up with what we thought to be best practice at the time. For example, delay boarding an aircraft until the passengers were off; don't congregate in groups; wash your hands often; and wear any Personal Protection Equipment (PPE) that could help, such as disposable gloves. This put a lot of strain on the engineering community as it came to terms with the Health & Safety issues we were all facing.

Now we are in a second phase as I see it, with aircraft being parked up and staff placed on furlough for weeks or even months at a time. As Steve mentioned in his editorial, this will bring immediate day-to-day concerns for many. Human factors will become a concern as we enter the next (third phase) and look to start rebuilding our operations with extremely tight budgetary controls across all airlines. Staff will come back to work no doubt carrying the distraction of Phase 1 and Phase 2. The Health & Safety threat will probably still be apparent for some time. Staff will have issues with their own family situation and possibly even having lost a family member or friend in recent weeks.

For this next, third phase, we need to start thinking about our responsibility as engineers to focus on the job we are doing at the time we are doing it. If you have any HF concerns, you should be reporting them and making your company aware of issues as they become apparent. Reporting, in my opinion, should increase significantly for the companies with a robust SMS system and a strong culture of "safety first" throughout their organisation structure. Don't forget, increased reporting is a good thing, it demonstrates that the company knows where the real issues are. However, if you don't have a strong culture of safety in your company, and you are not happy to raise a hand and ask for support or point out a problem to your management team, then please let us know here at CHIRP. We can challenge on your behalf in confidence, or even escalate to the CAA for further investigation.

I am convinced that we will face problems not apparent as I write this editorial, such as engine and airframe problems related to storage for certain types; this will put a lot of pressure on those at work. Authorisations will have lapsed, training dates will have passed with no training completed, so companies need to consider what they need to do in order to prepare staff for a safe return to work. I have been looking at e-audits for stations previously closed due to COVID-19 in preparation for them reopening; HF audits (conversations in reality) to ensure the staff are in a good mental/emotional condition to return to work; and of course, don't expect staff to come into work on the first day and complete all missed training and ensure they are up to date on any changes to procedures as well as start working. Build the time in for a smooth, safe return to service for the staff and the fleets of aircraft sitting idle.

Stay safe everyone! Terry Dudley, Deputy Director Engineering

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Comments on Previous FEEDBACKs

Comment No 1 - No Night Landings for New FOs

I'm writing to you to comment on the report in Edition 133 "*No night landings for new FOs during Line Flying Under Supervision.*" I'm a relatively new 737-800 FO, having just under 400hrs on type. Prior to completing my 737 Type Rating I had not flown anything bigger than light, twin-piston aircraft.

I found myself in the exact same position as the reporter describes. Having completed all of my line training on early sectors during the summer, I did not operate the aircraft at night until I was released to the line. I felt this placed an undue amount of pressure on myself and the Line Captain I was with, particularly as I had initially struggled to get my landing technique right. In the end, there were no issues for myself, but I am aware of colleagues of similar experience who have had additional training rostered following some heavy landings at night. It actually transpired that my bigger issue at night was rotation on take-off. I tended to rotate too fast on a couple of occasions, which I put down to the differing visual picture, particularly on shorter runways where you see the red lights approaching at speed. I have raised the issue with our fleet training manager and he agrees with me that night sectors as part of line training would be desirable but that the company will not make it a mandatory part of the syllabus due to operational difficulties. It was also mentioned that the 737 Flight Crew Training Manual does not differentiate between day and night for rotation or landing technique.

When I read the CHIRP comment on the original report, I found its tone to be slightly dismissive. I completely agree with the points about pilot incapacitation, but the other points I think brush over the issue. Simulator training is no substitute here, as good as the sims are, they don't replicate approach and landing conditions well. Also, whilst a night rating will have been completed, this will have been in a single-engine piston aircraft, which is so different in technique to a medium-jet it is almost irrelevant. Students who have followed the modular route may have completed their night rating several years before securing an airline job, and may not have flown at night again since.

Personally, I do feel that airlines should be rostering night line training for low-hour trainees where it is their first experience of a transport category aircraft. There should also be a line-training syllabus item to fully discuss the differences that may be experienced at night.

CHIRP Comment: It was certainly not our intention to appear dismissive about the challenges for inexperienced pilots conducting their first night take-offs and landings on type following initial

conversion. We recognise that some pilots coming through training do not have a wealth of experience to fall back on, and any new task is therefore bound to raise challenges when conducted for the first time - night take-offs and landings are no exception. There are practical difficulties that would be encountered in mandating that line-training syllabi should include night take-offs and landings before pilots are released for line operations, especially for those going through their training during the longer days of summer. The primary issue is whether there are sufficient mitigations in place to conduct the task safely without doing so. We wouldn't argue the fact that practical real-life experience would of course be ideal, but simulators also have a vital role. More fundamentally, and as with any aspect of commercial operations, good Crew Resource Management (CRM) within the cockpit is often the key; inexperienced FOs should have no hesitation in declaring to their Captain that they have few, or no, night take-offs or landings on type, seek their advice and guidance, and talk through the potential pitfalls and issues prior to carrying out the take-off or landing. This is especially pertinent for inexperienced FOs who fly side-stick aircraft where it may not be as obvious to the other pilot what control inputs they are making. For their part, operators also have a clear management and safety imperative for ensuring that newly qualified FOs gain broad experience as soon as practical during line training so that they can be rostered for the full range of operations.

Comment No 2 - GAFB Edition 78: Unsafe Clearance

I stumbled across an old CHIRP GA FEEDBACK and had another read. The report entitled Unsafe Clearance struck a chord. I am forever telling my ATCOs that a clearance of "climb straight ahead to *,000 feet" is severely ambiguous. Does it mean climb straight ahead until passing *,000 feet before turning on course, does it mean climb straight ahead to maintain *,000 feet before turning on course, does it mean climb straight ahead until advised and maintain *,000 feet on reaching? The three are completely different and unless the clearance is specific it will result in confusion. With my CPL/FI/FE hat on I would never accept such a clearance without clarifying the meaning.

CHIRP Comment: We're grateful for this comment, which not only generated a healthy discussion amongst Board members but also brought good cheer to us all that our various versions of FEEDBACK are being squirrelled-away by many for future reference! Open-ended clearances can undoubtedly be a cause for uncertainty, but the unanimous view from the Board members settled on 2 aspects: first, and as ever, make sure you fully understand what you're being asked to do, and if not, ask for clarification; secondly, adhere to exactly what you've been told to do until given further instructions – in the case quoted, the Board's view was that the instruction "climb straight ahead to *,000ft" meant 'climb straight ahead to *000ft and maintain heading and altitude'. Ideally, controllers should of course qualify the transmission with what's coming next, such as "...and maintain", "...and turn on course" or "... and await further instructions" but sometimes busy frequencies can mean that clearances are abbreviated. But it's fundamentally right to ask for clarification if you're uncertain, and controllers should absolutely not scold pilots for doing so.

Comment Number 3 - Follow-up on Comment in ATFB Edition 132

In response to criticism about CHIRP's response to a report about passengers boarding the aircraft before flight crew, we investigated further. The criticism centred on the fact that although this situation used to happen once in the proverbial 'Blue Moon', it is becoming a more prevalent occurrence. We have learnt that the operator concerned is updating its risk assessment for this practice to ensure it meets the modern operating environment. They recognised that, although this historically used to be related more to short-haul operations, there are other destinations where protracted loading of hand baggage in larger aircraft for example can mean that passengers have to begin boarding early, sometimes in the absence of the flight crew. In revising their policy and procedures, the company commented that they will address the concerns raised by the original reporter. This work is ongoing and so we don't as yet have the details of what they propose, but they commented that, once the work is complete, they will make changes through the normal company procedures and regulatory oversight as appropriate.

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Reports

Report No.1 - Fuel Emergencies

Report Text: I have recently done controller emergencies training and watched a replay of a bad weather day where 2 [aircraft from the same operator] ended up diverting from [Airfield]. There seems to be a disparity not only in ATC but with pilots too of what 'minimum fuel' means. Our [controller] procedures state that we are not to allow priority until a Mayday fuel is reported. However, due to company reasons and vectoring around the busy London Terminal Manoeuvring Area (TMA), despite the Mayday, they had to be vectored around certain airfields.

Now, if you can go around London and land, then it is not a Mayday and this could muddy the waters when there is an actual emergency. Also, just because [the operator] do not have a handling agent at [alternative airfield], they decided not to go there. Now if that's the case, clearly it is not a Mayday as this has a significant meaning in ATC/cockpit and you need to land immediately. This phraseology should maybe be looked at.

NATS Comment: A pilot's declaration of 'MINIMUM FUEL' informs ATC that all planned aerodrome options have been reduced to a specific aerodrome of intended landing and that any change to the

existing clearance may result in landing with less than planned final reserve fuel. This is not an emergency situation but an indication that an emergency situation is possible should any additional delay occur. A controller's response to a declaration of 'MINIMUM FUEL' is to confirm the estimated delay (mins) for en-route/joining/airborne hold, or track miles from touchdown if the aircraft is being vectored for an approach.

Once in possession of this information the pilot will determine if they can continue to the aerodrome with or without declaring a fuel emergency. Controllers will update the pilot of any

increase to the expected delay after a declaration of 'MINIMUM FUEL' after which, they would expect the pilot to declare an emergency using either 'MAYDAY' or 'MAYDAY Fuel' and the controller would then provide such aircraft with flight priority Category A (see table). Category A is the highest priority and Z the lowest. When two or more flights of different categories request clearance the flight with the highest category shall be dealt with first.

The circumstances in each aircraft emergency vary, and controllers must use their own judgement in handling a particular emergency. This can include sterilising a runway or airspace sector, breaking-off aircraft ahead from the approach or rearranging the traffic pattern as necessary to ensure that an aircraft in an emergency has an uninterrupted approach. An aircraft ahead may be permitted to continue the approach to land on the declared runway but again this is a judgement call depending on the traffic presentation/phase of flight.

Background Information: As background, ICAO PANS-ATM Doc4444 Ed16 provides the following definition and information regarding minimum fuel:

Definition: *Minimum fuel.* The term used to describe a situation in which an aircraft's fuel supply has reached a state where the flight is committed to land at a specific aerodrome and no additional delay can be accepted.

15.5.4.1 *When a pilot reports a state of minimum fuel, the controller shall inform the pilot as soon as practicable of any anticipated delays or that no delays are expected.*

Category	Type of Flight
A	Aircraft in emergency (e.g. engine fault, fuel shortage, seriously ill passenger). Aircraft which have declared a 'Police Emergency'. Ambulance/Medical aircraft when the safety of life is involved.
B	Flights operating for search and rescue or other humanitarian reasons. Post accident flight checks. Other flights, including Open Skies Flights, authorised by the CAA. Police flights under normal operational priority.
C	Royal Flights Flights carrying visiting Heads of State
D	Flights notified by the CAA carrying Heads of Government or very senior government ministers.
E	Flight check aircraft engaged on, or in transit to, time or weather critical calibration flights. Other flights authorised by the CAA.
NORMAL FLIGHTS	
<ul style="list-style-type: none"> ▪ Flights which have filed a flight plan in the normal way and conforming with normal routing procedures. ▪ Initial instrument flight tests conducted by the CAA Flight Examining Unit. (RTF callsign "EXAM") 	
Z	Training, non-standard and other flights.

} which have been notified by NOTAM/Temporary Supplement

Note.— The declaration of MINIMUM FUEL informs ATC that all planned aerodrome options have been reduced to a specific aerodrome of intended landing, and any change to the existing clearance may result in landing with less than planned final reserve fuel. This is not an emergency situation but an indication that an emergency situation is possible should any additional delay occur.

For UK operations, CAA's [CAP 493 Manual of Air Traffic Services – Part 1](#), Section 1: Chapter 4 offers the following additional information:

10A.2 A pilot's declaration of "MINIMUM FUEL" indicates that no further fuel diversion options are available where the aircraft is committed to land at the pilot's nominated aerodrome of landing with not less than 'final reserve fuel'. However, "MINIMUM FUEL" RTF phraseology is not universally used by every aircraft operator and pilot.

Note: Final reserve fuel is typically fuel for 30 minutes of flight for turbine powered aircraft or 45 minutes for piston powered aircraft. (EASA-OPS)

...

10A.5 At locations where EATs are not issued until the amount of delay reaches a particular value, controllers must provide a general indication of the delay, based on the best information available at that time (see ENR 1.9-4).

10A.6 Once in possession of either the estimated delay or remaining track mileage, the pilot will determine whether or not he can continue to the aerodrome with or without declaring a fuel emergency. Controllers shall keep pilots informed of any increase in delay or increase in track mileage after the pilot's initial declaration of "MINIMUM FUEL" following which the controller can expect the pilot to declare an emergency.

10A.7 Controllers shall respond to a pilot who has indicated that he is becoming short of fuel but has not declared "MINIMUM FUEL", by confirming the estimated delay he can expect to receive expressed in minutes, or no delay, when the pilot is en-route to, is joining, or is established in an airborne hold; or by expressing the remaining track mileage from touchdown if the aircraft is being vectored to an approach; then ask the pilot if he wishes to declare an emergency.

10A.8 Pilots declaring an emergency should use the following RTF phraseology "MAYDAY, MAYDAY, MAYDAY" or "MAYDAY, MAYDAY, MAYDAY FUEL" and controllers shall provide such aircraft with flight priority category A (SERA.11012(b)).

Also, CAA [Safety Notice SN-2019/002](#) dated 13 March 2019 "**Protecting Final Reserve Fuel and The Minimum Fuel Declaration**" expands on these definitions and provides useful guidance regarding the protection of final reserve fuel and associated MAYDAY declarations. It requires that an operator's fuel policy should "...culminate in a mandate to protect final reserve fuel. This mandate should identify the pre-emptive actions required by the flight crew to achieve this aim; and is intended to ensure sufficient fuel remains available to accomplish a safe landing when unforeseen circumstances preclude completion of the flight as originally planned." In achieving this, SN-2019/002 describes a 3-stage process of:

1. **REQUEST DELAY INFORMATION FROM ATC** when unanticipated circumstances may result in landing at the destination aerodrome with less than final reserve fuel, plus fuel required to proceed to an alternate aerodrome.
2. **DECLARE MINIMUM FUEL** when committed to land at a specific aerodrome; and any change to the existing clearance to that aerodrome may result in landing with less than the planned final reserve fuel.
3. **DECLARE A FUEL EMERGENCY** (i.e. MAYDAY FUEL) when the calculated usable fuel predicted to be available upon landing at the nearest aerodrome where a safe landing can be made is less than the planned final reserve fuel.

CHIRP Comment: Understanding of fuel states, associated RT calls and courses of action has been a topic for discussion in many forums in the past, with confusion being evident at times. The heat of the moment is no time for uncertainty, and so pilots and controllers need to be clear about what is being stated and what the response will be. Now 7 years on since the introduction of the new ICAO low-fuel terminology, it has yet to be applied or perhaps fully understood in all locations worldwide. Ultimately, controllers expect to receive a 'MINIMUM FUEL' call before a 'MAYDAY'. 'MINIMUM FUEL' means that an aircraft is committed to land at its cleared destination with planned final reserves, and that any change to the existing clearance would then take the aircraft below this. On hearing 'MINIMUM FUEL' controllers provide an expected delay time in minutes for aircraft en-route,

or the track miles to be flown to an aircraft being vectored. If such a delay/track miles would take the aircraft below minimum fuel, or a further delay subsequently arose, controllers would anticipate a 'MAYDAY', which is mandatory if an aircraft would land with less than the planned final reserve.

Importantly, 'MINIMUM FUEL' is not a declaration that confers any special treatment by ATC, i.e. it is not an emergency situation, but is merely an information message. Controllers are not required to provide priority to pilots of aircraft that have indicated or suggested that they are becoming short of fuel or have used the phraseology 'MINIMUM FUEL'. Conversely, and as stated in the ICAO Doc 9976 Flight Planning and Fuel Management Manual, Para 6.8, "The declaration of a MAYDAY provides the clearest and most urgent expression of an emergency brought about by insufficient usable fuel to protect the planned final reserve. It communicates that immediate action must be taken by the PIC and air traffic control authority to ensure that the aircraft can land as soon as possible. The 'MAYDAY' declaration is used when all opportunities to protect the final reserve fuel have been exploited and, in the judgement of the PIC, the flight will now land with less than final reserve fuel remaining in the tanks."

The important phrase regarding the declaration of a 'MAYDAY' is "...land as soon as possible", and so it is incumbent on controllers and pilots to enable this. Routing past suitable airfields would not seem to fit this requirement provided that they were able to handle the aircraft, but there may be circumstances and factors that militate against their use at the time, or whether direct routing can be achieved. The intention is clear though, declaration of 'MAYDAY' should result in the aircraft routing to the nearest suitable airfield with top priority.

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Report No.2 - Unsafe Working Practices and Unrecorded Work

Report Text: [Aircraft registration] arrived at [airport] for its usual daily turnaround. It was decided to remedy a PFCS defect that required changing of a pressure transmitter located in the right-hand undercarriage (U/C) bay. I carried out a Tech Log debrief and, as I was walking away from the aircraft, I saw engineers sitting on steps inside the U/C bay, I approached and noticed that they had no safety locks or gags fitted; I asked the question and was told that nothing, locks or gags etc had been fitted. I told them to get clear of the door and hazardous area until it had been made safe, I also spoke to the engineer and explained the seriousness of his actions. I told him I would return and check on his working practices. When I returned later the U/C door was closed and the engineers gone. I spoke to the engineer in the crew room and asked how he made the U/C bay area safe and he told he had pulled various circuit breakers (CB), he couldn't recall exactly which ones but I said they would be recorded in the tech log to which he replied no, he had not recorded this. On inspecting the paperwork there was only a single entry for clearing the ADD [Acceptable Deferred Defect]. I am concerned as this is becoming commonplace and I was only on the aircraft as we were short of B1 engineers; my normal role is as a Duty Shift Manager, had I not been around this would have gone unnoticed. I returned to the aircraft and inspected all CB racks prior to releasing the aircraft. We have recently lost our [supervisor] grades and I believe this is a contributory factor in these lapses.

CHIRP Comment: This report demonstrates two ends of the spectrum of workplace behaviour; the Manager, demonstrating high standards of professional behaviour in his day-to-day work, and the engineers, who were evidently disregarding the safety aspects of the work they were performing, and so endangering themselves, their colleagues and potentially the passengers. The question is, why were the engineers seemingly deliberately flouting safety-related procedures that have been built over the years on the back of previous safety issues? An important part of being an engineer is to follow the rules as specified by the regulator and the organisation that employs them. Deliberately ignoring procedures out of laziness is unprofessional and cannot of course be condoned, but were there external pressures to complete the task that tempted them to take short-cuts? As mentioned in our editorials, such pressures are highly likely to become evident in the coming months as aircraft are returned to service after the COVID-19 hiatus, so engineers and managers must be alive to the dangers of cutting corners and ensure that they remain meticulous in carrying out their tasks in accordance with all the relevant safety requirements. As ever, effective supervision plays an important role, and CHIRP has forwarded the reporter's concerns about the changes to the company's supervisory and management structures to the CAA for further review.

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Report No.3 - Reporting of Transition Level

Report Text: We are now mandated to inform every aircraft of the Transition Level. At my unit, this is done via the ATIS. The Transition Level is based on the Transition Altitude, which outside CAS in the UK is based on the standard 3000ft. At our unit in Class G, we must work on that, despite our Minimum Safe Sector Altitude being 5600ft. This means we transmit a Transition Level which is not Terrain Safe and is below Minimum Sector Altitude (MSA). This is inherently unsafe, yet mandated by the CAA.

CHIRP Comment: As the reporter comments, the standard Transition Altitude in Class G airspace in UK is 3000ft, and this can be below MSA at certain airfields. According to ICAO Doc 7030, the Transition Level (the lowest flight level for use above the Transition Altitude) “...shall be located at least 300 m (1 000 ft) above the transition altitude to permit the transition altitude and the transition level to be used concurrently in cruising flight, with vertical separation ensured.” As the reporter states, it is therefore possible for the Transition Level to be below local MSA. However, as stated in SERA.5015 (Instrument flight rules (IFR) — Rules applicable to all IFR flights), the minimum levels when IFR are:

...an IFR flight shall be flown at a level which is not below the minimum flight altitude established by the State whose territory is overflown, or, where no such minimum flight altitude has been established:

- (1) over high terrain or in mountainous areas, at a level which is at least 600 m (2 000 ft) above the highest obstacle located within 8 km of the estimated position of the aircraft;*
- (2) elsewhere than as specified in (1), at a level which is at least 300 m (1 000 ft) above the highest obstacle located within 8 km of the estimated position of the aircraft.*

CHIRP contacted the CAA for their view and they confirmed that, when VFR, pilots will be expected to visually ensure terrain separation and, when IFR, they must ensure that they maintain either 1000ft or 2000ft above the highest obstacle within 8km (~5nm) of the estimated position of their aircraft irrespective of the Transition Level.

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Report No.4 - Go-around from Unstable Approach at Stansted

Although not a specific report to CHIRP itself, as part of the January 2020 meeting the board discussed the recent AAIB and UKAB reports regarding an Airprox at Stansted that involved a ‘piggy-back’ go-around at night. The go-around aircraft was hot-and-high, with little prospect of a stabilised approach when, at around 1000ft, the somewhat flustered crew initiated a go-around. During the go-around on the published Missed Approach Procedure (MAP), the FO, who was the Pilot Flying, became overloaded and the Captain took control. However, as the Captain attempted to take control, the FO continued to make control inputs and the resulting CRM issues meant that they did not respond to ATC’s instruction to ‘turn left now’ for about a minute. This instruction had been issued in order to avoid another aircraft that had just got airborne and was departing along the SID. In the event, the other aircraft was subsequently instructed to level off, did so, and were also alerted by their TCAS. However, the 2 aircraft came within 300ft vertically and 80m laterally of each other at their closest point of approach. The UKAB assessment (Airprox 2019207) was Risk Category B: Safety not assured.

In this case, because both the MAP and the Standard Instrument Departure (SID) were taking both aircraft in the same direction, there were very good reasons for the ATCO to issue fresh instructions but, along with the CRM breakdown, these instructions contributed to pushing the FO beyond his capacity. The requirement for go-arounds to be flown using the aircraft autopilot whenever possible is well known and recognised, and the CHIRP Advisory Board commented that the published MAP should ideally be the one that is most likely to be flown without interruption by ATC.

The issue of MAP procedures had also previously been raised with the CAA in 2014 in light of a previous CHIRP report. In that case, the CAA agreed to encourage airports to publish the MAPs that they expect to be used as a matter of routine.

CAA Comment: Following the Stansted incident in February 2019 the CAA (AAA) raised an internal safety risk relating to Piggy-Back Missed Approaches. These are circumstances where safe separation between a departing aircraft and an arriving aircraft (executing a published missed approach procedure) erodes. The likelihood of these occurrences increases as single runway (or

closely spaced parallel runway) operations intensify. Following the raising of this generic risk within the CAA's Regulatory Safety management System, the issue was discussed with NATS at the Accountable Manager Meeting in mid-2019 and a series of monitoring actions proposed. That work is continuing as we refine an action plan associated with the risk, the first element of which is to identify other aerodromes and ANSPs which present increased likelihood of a piggy-back missed approach because of increasing intensity of operations.

CHIRP Comment: Although the CAA had taken action based on the previous CHIRP report, the Board's discussion about MAP-versus-SID piggy-back missed approaches again brought this issue to the fore and the Board were heartened that the CAA have agreed further work to look again at MAP procedures; a good example of positive outcomes from the wide-ranging Board discussions. But there are other lessons within the incident that would benefit from further thought by pilots and controllers. For example, having made the decision to go around when the aircraft was at 1000ft, was it necessary for the crew to initiate the go-around immediately rather than pausing a short while? Had they done so, the crew could have taken the opportunity to spend a few seconds to warn ATC first, and to conduct a micro-brief about who would fly the go-around. This would likely have prevented the Airprox.

Recognising that ATC had very few options in the circumstances, and that an immediate response to the 'turn left now' call was expected, it was also relevant that separation had been reduced in accordance with Reduced Separation in the Vicinity of an Airfield (RSVA) procedures which require the controller to ensure only 'adequate separation' (which is not specifically defined in the RSVA procedures stated in MATS Part 1, Section 1, Chapter 3). However, the go-around crew were on the Approach frequency, whereas the departing crew were speaking to the Aerodrome Controller/Departures. There appeared to be a lack of clarity over who was practically ensuring the 'adequate separation' of the 2 aircraft as a result.

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Report No.5 - Long Term Storage.

Report Text: As a Part-66 Licensed Engineer, I would like to raise potential issues with the long-term grounding of the Boeing 737-Max -8/-9 fleet. I gather from media data that there are registered UK aircraft currently affected by the groundings as a result of the two tragic accidents.

I was previously actively involved with Boeing for the long-term development of a Storage Program for [Aircraft Type] aircraft outside of the Aircraft Maintenance Manual (AMM) Chapter 10 requirements. This activity resulted in a Boeing D6 document being created for the very first time to ensure continued airworthiness whilst any [Aircraft Type] aircraft was in long-term storage (>365 Days). This D6 document met with CAA/FAA approval and covered Preparations for Storage, In-Storage and De-Storage requirements. Given the known complexity and processes required to meet all the D6 requirements, there were multiple AMOC applications to Boeing and, as such, the AMM Chapter 10 proved to be well below the requirements to store an aircraft.

I therefore ask whether or not Boeing has issued a D6 document specific to the B737-Max in light of the anticipated extended time before those affected aircraft are given authority to return to service. I have some concerns that perhaps these aircraft may well be stored under the AMM Chapter 10 and, as such, are not yet aware of the pure logistical aspects and environmental risks whilst in storage. However, perhaps Boeing have issued a D6 document for long-term storage, in which case my only concern is the thorough auditing process on compliance; which I am confident that the CAA will ensure in terms of airworthiness, cost and certification.

CAA Comment: The reporter's comments are not only relevant to the B737-Max, but also to the current situation during the COVID-19 lockdown where aircraft are not increasing flying hours or cycles. Several major OEM's have issued a 'stop the clock' option regarding maintenance tasks that are controlled by calendar time. Previously, calendar time tasks did not stop whilst aircraft were on the ground (i.e. on hangar checks). However, some calendar tasks can now be extended by either 3, 6 or 9 months. For operators to be able to take advantage of this, they will need to contact their NAA. The UK CAA will look at issuing a Temporary Amendment to approved maintenance programmes if a suitable application is made to the assigned surveyor.

CHIRP Comment: The reporter was extremely knowledgeable and the CAA welcomed his expertise when alerted to it by CHIRP. The report prompted an analysis of the storage of the B737 Max and B787 aircraft, drawing on experience gained with long-term storage of aircraft after 9-11 that had shown the need for additional measures beyond those contained in manufacturers' generic guidance. This is particularly relevant at this time with a very high number of parked aircraft globally, and any aircraft going into long-term storage will have specific requirements within their Aircraft Maintenance Manuals. More specifically, it is not appropriate to simply roll-on short-term storage procedures for long-term situations.

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Report No.6 – Fatigue: Lack of Reporting Issues due to Pilot Burnout.

Report Text: After a busy summer at [Airline], I felt burnt out and unhappy with the environment at work. Lots of events over the summer should have been reported, but after work I have no energy and lose motivation and interest after the event and before the next block of work and further events. It's a constant struggle to try to keep the operation going; constant pressure from the company on costs and time performance.

Pressure was frequently applied by turnaround managers to depart early before we were ready, or by the unseen Ops Dept bringing forward the departure time without any reference to us at all. Dispatchers are being replaced by "gate agents" at [airfield] and, at some outstations, have no operational experience and who sometimes don't even communicate with the pilots at all. "It's all on the computer, we don't need to come and speak to you" the girl at [airfield] told me bluntly. I asked where the ground power was. Bluntly.

Engineering can't seem to keep up, and I have never seen so many Acceptable Deferred Defects (ADD) on a daily basis: multiple ADDs, and operating procedures, all to be looked up and understood; many wrong and confusing tech log ADD entries; and difficulty at times to get line engineering to actually understand the issue and send an engineer out to help clarify. There's no time allowed in the report time for carefully going through the tech log. Major things don't get fixed but are left to the time limit before any attempt made to fix. Engineering and Flt Ops are oblivious to the extra aggravation and time required to operate aircraft with no APU, especially with inexperienced co-pilots. Then a slot is missed, the pilots attribute the delay to the U/S APU, and then a manager chases you in-flight by ACARS and by email telling you that Engineering won't accept that the delay was all down to them. There have been multiple smoke and fumes events in the last few months, which leaves you worrying if your health will be affected one day by another incident: these multiple events every month are accepted as a "norm", and a colleague reported he was pressured by an engineering manager to take an aircraft that he had just had a fumes event on.

EASA FTLs allow for long rostered days. A number of times I have felt exhausted before the EASA FDP is up. There is pressure to keep the show on the road and to go into discretion. Delays out of base are common. Unrealistic multi-sector long days are rostered, especially on early shifts. I have wanted to report fatigue issues on multiple occasions over the summer but have frequently lost the will and energy.

Management doesn't care about the staff and how they feel and what it's like for them trying to operate out of [airfield] every day. They tell me to be warm and approachable to passengers, but, to my boss with numerous pilots under him, well I'm just a number. It's not good and not as it should be if it is to be safe and sensible.

CHIRP Comment: The reporter painted a worrying picture of the pressures assailing short-haul pilots, and the references to ADDs and shortages of spare parts are consistent with reports submitted by engineers working for this operator. Whilst it is recognised that operators are under commercial pressure and only very small operators will be able to manage staff on an individual and personal basis, it should still be possible to prevent pilots feeling that they are simply 'problems' to be processed when reporting fatigue or being under pressure to meet long rostered periods. Unless there is a report then there will not usually be an investigation, but effective fatigue management means that all instances should be reviewed without preconceived assumptions about the individual's culpability. Operators who automatically grant a few days off to fatigued pilots deserve credit, but need also to recognise that pilots may push themselves to the point at which their

cumulative fatigue cannot be 'cured' by a couple of days off; returning to work before they are properly rested is likely to result in further fatigue absences down the line. More importantly, extended absences beyond a couple of days from fatigue should not be classified as illness without a diagnosis by a qualified doctor. Ultimately, although operators understandably need to guard against abuse of the system, there is a difficult balance to be made between doing so and ensuring the empathy that is required when dealing with fatigue reports – an overly-assertive 'get it done' management culture can be counter-productive to morale, efficiency and safety in the long-term.

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Report No.7 – Go-around due to birds.

Report Text: On the final stages of our ILS approach, I spotted a flock of birds over the threshold moving right-to-left and, as I scanned, they just kept coming. I immediately elected to go-around as our best course of action. During the go-around I estimated that the flock must have consisted over 500 birds, if not many more. I felt with almost certainty that a continued landing into the birds would have, at the very least, caused substantial damage to the aircraft. On our subsequent approach, we were able to complete a normal landing without any further issues. During my walk-around for our departure, I observed that we did not impact any birds. When we informed ATC of the reason of our go-around, they seemed very nonchalant about the reason, as if encountering such a huge amount of birds was normal!

Lessons Learned: As this was my first large flock of birds encountered (I've encountered birds on approach many times before), I will be more vigilant to the size. I do feel that when large flocks of birds are present, this information MUST be conveyed to the pilots landing here or at any other airport concerned. It's not enough to simply hear on the ATIS that birds are present at the airport.

CHIRP Comment: There was a warning about bird activity on the ATIS but the reporter considered that such a large flock of birds on the final approach should have prompted ATC to issue a specific warning over the RT. European airports have a responsibility to manage wildlife out to 13 km from the airport. However, at this coastal airport, the approach would have been over water where the airport could not be expected to comply with the requirement. It was not clear whether the crew had filed an ASR but a go-around would almost certainly require the crew to explain the circumstances to the operator. CHIRP agrees that a call from ATC would have been appropriate if the birds had been observed from the Tower; indeed, ICAO PANS-ATM Doc 4444 Ed16 Section 7.5 requires controllers to provide pilots with essential information regarding aerodrome conditions, which includes birds on the ground or in the air.

Crews encountering flocks of birds on final approach have a decision to make: carry on and risk hitting the birds while the engines are at low power, or go around in the hope of avoiding the birds but with the risk that damage to the engines at high power would likely be more serious. Every circumstance will be different, and there is no 'right answer', but there's food for thought and debate in this accident report – [B738, Rome Ciampino, Italy, 2008](#).

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Report No.8 – FTLs: Possible non-compliance.

Report text: My operator employs several pilots who are non-based. Recently our Operations Manual was amended to include a paragraph in relation to minimum rest requirements where out-of-base crew only have to have 10hrs minimum rest. For obvious reasons, this would normally only apply once every blue moon, after a based crewmember gets sent out-of-base during abnormal circumstances to minimize disruption. However, today, when I realized I would have less than my minimum 12hrs rest, when I contacted crew control I was informed that as a non-based pilot my minimum rest was only 10hrs because I was out-of-base. I informed them that I am permanently out-of-base, so surely that cannot apply to me. I was then told that these limitations are fixed inputs in their computer-program, cannot be altered and, as such, have to be adhered to.

CHIRP Comment: The reporter's reference to an inflexible computer programme (computer says, 'no') was similar to the issue raised in a previous report about individuals who are treated in an impersonal and inflexible way. With regard to the issue at hand, EASA ORO.FTL.200 requires all crew members to have a home base, with a minimum rest period of 12hrs when operating from this

home base. The minimum rest period when away from home base is covered under ORO.FTL.235 Rest Periods as follows:

The minimum rest period provided before undertaking an FDP starting away from home base shall be at least as long as the preceding duty period, or 10 hours, whichever is greater. This period shall include an 8-hour sleep opportunity in addition to the time for travelling and physiological needs.

This requirement may have a loophole/unintended consequences in so far as it was not intended to be used day after day for pilots undertaking touring duties. Although in this instance this is not a UK operator, CHIRP sought the CAA's view on continuous 'mobile' rostering and they confirmed that they do not permit this for UK operators. CHIRP is also following this up with the relevant NAA.

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Report No.9 – Fatigue: Attempted incorrect entry of Zero Fuel Weight (ZFW).

Report Text: During cruise I incorrectly attempted to update the ZFW via the gross weight entry field. I had been scheduled to operate 4x 3-day, 2-pilot trips in 13 days, and this trip was No.4 of 4 outbound [UK-US East Coast]. During roster construction I had allowed the system to build a roster to EASA limits, and the reason for this was to generate time off - ironically to allow recovery from a punishing summer schedule. Afterward, in [US destination], I considered going fatigued but did not as I was concerned at the company's reaction as well as my own frustration/embarrassment at getting myself into that situation. I resolved to never allow such a roster build again. I strongly regret not going fatigued and will certainly do so next time should the same circumstances occur.

CHIRP Comment: CHIRP is grateful to the reporter for submitting this self-critical report which highlights the pitfalls and unintended consequences of trying to game the rostering system. When this happened, the operator was content to allow the bids provided the result was compliant with the numerical limits of EASA FTLs but these limits are designed to be applied with active management to limit fatigue. The operator has consistently advised CHIRP that it encourages its flight crew to declare when they are fatigued, no matter the circumstances, but it is understandable that professional pilots have pride in what they do and their ability to complete their rostered duties. Management of fatigue is a two-way process, operators need to maximise the use of their flight crews within FTLs, but in a managed way, and flight crews need to be honest about reporting when feeling fatigued. In the latter respect, it can be difficult to determine when just feeling a bit jaded crosses the line into being fatigued, but none of us are indestructible and there are times when we have to recognise our own limitations.

Aside from the fatigue implications in this report, we'd highlight that the incorrect entry of performance data is the top risk in the CAA's recently endorsed CAT Safety Risk Portfolio. Although the reporter doesn't mention which, Flight Management Computers (FMC) and Electronic Flight Bags (EFB) are both part of this concern. Adherence to SOPs and the independent cross-checking of data entry is vital in picking up errors, but they can still creep in. The CAA tells us that they are aware of the associated issues of rapid technical innovation raised in this and other CHIRP reports, and are engaged with the aircraft manufacturers and EFB software developers through the industry-wide Safety Performance Working Group.

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Report No.10 – Closure of Office / Part M Team.

Report Text: [Airline] served notice that [regional office A] was being closed. The whole of the Part M team were offered the choice of relocation but declined and were given 3-months' notice. My concern is that the existing workforce cannot cope with the workload of trying to take on a [new type] fleet, hand back an [old type] fleet and now have a fleet of [additional type] to manage of which they have little knowledge. I am concerned that mistakes will be made which could have serious consequences. I also do not believe that [Airline] will be able to recruit adequate, experienced replacements in [regional office B] to make up the numbers. The Part M team in [regional office A] was recruited en-bloc to manage the [additional type] fleet when they took the a/c over because they could not recruit staff in [regional office B], I doubt they will have any more success now. Losing a whole Part M team of 7 people with a combined total of 200 years' experience in the industry and not replacing them adequately or placing too much burden on the existing workforce to replace them is of grave concern and needs highlighting before it leads to any unfortunate or serious errors.

Airline Comment: The initial adoption of the new Part M team in [regional office A] included an inflated headcount because a high attrition rate was expected. Unfortunately, the first two team members to leave the organisation were the Technical Services/Planning Manager, and the Senior Technical Services Engineer, who both decided to retire. Subsequently, both individuals then committed to continuing to work on a part-time basis and will provide an effective mitigation against the otherwise significant loss of experience.

However, with these two key team members now working remotely from the office, it was determined that continued and effective management of the remaining team members from [regional office A] would not be practicable going forward. There was also a belief that, with the two key members leaving, this would accelerate the staff attrition rate. At the same time, the opportunity existed to rationalise the Part M support of the whole [Airline] Fleet and re-centralise the Part M support functions. As part of this significant change, a risk assessment was conducted to identify key risks and mitigations where required. Mitigations to address the identified risks included, *inter alia*: retaining the 3 most-senior members of the Part M Team; engaging temporary contractor support for the [new type] fleet; making additional 3rd-party CAMO support available if required during the transition; and ensuring that the [old type] fleet 'end of lease' evidence files & reports were prepared well in advance of any physical hand-back activities checks and ahead of any [additional type] fleet take-on activities.

In addition to the core Part M support staff, a significant amount of experience has been retained from the engineering management and Pt 145 maintenance teams - the previous historic Pt 145 post holder was initially taken into the Part M team and continues to support this function within his current role as Head of Maintenance.

CHIRP Comment: The reporter's comments are consistent with other reports that CHIRP has received regarding the overloading of Part M teams as companies rationalise their operations in recent times but, based on this company's responses, it seems that, in this instance, they are aware of the issues and have put mitigations in place to reduce the risks associated with the significant changes within their fleet and Part M group. People working in Part M teams bring with them a wealth of previous experience and knowledge from years in aviation that cannot be switched back on very easily once lost, and the careful husbanding of these teams is vital to ensure manageable workloads and retention of expertise during business changes.

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Contact us

Steve Forward - Director Aviation - GA, Flight Crew and ATC
Terry Dudley - Deputy Director Engineering - Ground Handling and Engineering
Stephanie Dykes - Cabin Crew Programme Manager & Company Secretary - Cabin Crew
CHIRP, One Kingdom Street, Paddington Central, London, W2 6BD
01252 378947 | reports@chirp.co.uk | www.chirp.co.uk

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